AMENDMENTS TO THE CLAIMS

23-24. (canceled)

27-41. (canceled)

50-54. (canceled)

63. (canceled)

73. (currently amended) A ~~The~~ method of ~~claim 34,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

exposing the first and second eukaryotic cells *in vivo* or *in vitro* to conditions that inhibit unaltered mammalian enzyme but to which the altered mammalian enzyme is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered mammalian enzyme but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

74. (currently amended) A ~~The~~ method of ~~claim 34,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

exposing the first and second eukaryotic cells *in vivo* or *in vitro* to conditions that inhibit unaltered mammalian enzyme but to which the altered mammalian enzyme is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered mammalian enzyme but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from #614-to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54-to #1595 of SEQ. ID. No. 40.

81-82. (canceled)

85. (canceled)

141. (canceled)

142. (currently amended) A ~~The~~ method of ~~claim 141,~~ providing a selective advantage for proliferation of a first eukaryotic cell relative to a second eukaryotic cell, comprising

introducing a nucleic acid molecule encoding an altered inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; wherein the altered IMPDH is resistant to an inhibitor of purine biosynthesis; and the first eukaryotic cell is a mammalian cell;

contacting the first and second eukaryotic cells to the inhibitor;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell and the second eukaryotic cell does not contain the altered IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid molecule encodes the sequence of amino acids set forth in SEQ. ID. NO. 4 or the sequence of amino acids set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

143. (currently amended) A ~~The~~ method of ~~claim 141,~~ providing a selective advantage for proliferation of a first eukaryotic cell relative to a second eukaryotic cell, comprising

introducing a nucleic acid molecule encoding an altered inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; wherein the altered IMPDH is

resistant to an inhibitor of purine biosynthesis; and the first eukaryotic cell is a mammalian cell;

contacting the first and second eukaryotic cells to the inhibitor;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell and the second eukaryotic cell does not contain the altered IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid molecule comprises the sequence of nucleotide residues from # 48 to # 1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from # 48 to # 1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614to # 619 in SEQ ID. No. 3; or the sequence of nucleotide residues from #54-to # 1595 of SEQ ID. No. 40.

166-189. (canceled)

190. (currently amended) A ~~The~~ method of ~~claim 175,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

contacting the first and second eukaryotic cells with an inhibitor of an unaltered form of the mammalian enzyme but to which the altered form is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered form of the mammalian enzyme but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

191. (currently amended) A ~~The~~ method of ~~claim 175,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

contacting the first and second eukaryotic cells with an inhibitor of an unaltered form of the mammalian enzyme but to which the altered form is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered form of the mammalian enzyme but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the

nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

192-205. (canceled)

206. (currently amended) A ~~The~~ method of ~~claim 193,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

207. (currently amended) A ~~The~~ method of ~~claim 193,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

208-218. (canceled)

219. (currently amended) A ~~The~~ method of ~~claim 208~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell, wherein the first eukaryotic cell is a human cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

220. (currently amended) A ~~The~~ method of ~~claim 208~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell, wherein the first eukaryotic cell is a human cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614-619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54-1595 of SEQ. ID. No. 40.

221-233. (canceled)

234. (currently amended) A ~~The~~ method of ~~claim 223,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

235. (currently amended) A ~~The~~ method of ~~claim 223,~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

236-247. (canceled)

248. (currently amended) A ~~The~~ method of ~~claim 238~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell, wherein the first eukaryotic cell is a mammalian cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

249. (currently amended) A ~~The~~ method of ~~claim 238~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell, wherein the first eukaryotic cell is a mammalian cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

250-259. (canceled)

260. (currently amended) A ~~The~~ method of ~~claim 251~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell, wherein the first eukaryotic cell is a human cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain

the altered mammalian IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

261. (currently amended) A ~~The~~ method of ~~claim 251~~ providing for selective proliferation, viability or proliferation and viability of a first eukaryotic cell relative to a second eukaryotic cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first eukaryotic cell, wherein the first eukaryotic cell is a human cell; and

contacting the first and second eukaryotic cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first eukaryotic cell exhibits greater proliferation, viability or proliferation and viability relative to the second eukaryotic cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first eukaryotic cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the

nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

262-263. (canceled)

265-266. (canceled)

268-269. (canceled)

270. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian enzyme of a nucleotide biosynthesis pathway into the first cell; and

exposing the first and second cells *in vivo* or *in vitro* to conditions that inhibit unaltered mammalian enzyme but to which the altered mammalian enzyme is resistant; whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian enzyme but is otherwise substantially identical or similar to the first cell;

wherein the mammalian enzyme is an enzyme of a purine nucleotide biosynthesis pathway;

wherein the mammalian enzyme is a mammalian inosine monophosphate dehydrogenase (IMPDH);

wherein the enzyme is a human IMPDH; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

271. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian enzyme of a nucleotide biosynthesis pathway into the first cell; and

exposing the first and second cells *in vivo* or *in vitro* to conditions that inhibit unaltered mammalian enzyme but to which the altered mammalian enzyme is resistant; whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian enzyme but is otherwise substantially identical or similar to the first cell;

wherein the mammalian enzyme is an enzyme of a purine nucleotide biosynthesis pathway;

wherein the mammalian enzyme is a mammalian inosine monophosphate dehydrogenase (IMPDH);

wherein the enzyme is a human IMPDH; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the

nucleotide residues from #614-to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54-to #1595 of SEQ. ID. No. 40.

272. (previously presented) A method of providing a selective advantage for proliferation of a first cell relative to a second cell, comprising:

introducing a nucleic acid molecule encoding an altered inosine monophosphate dehydrogenase (IMPDH) into the first cell;

wherein the altered IMPDH is resistant to an inhibitor of purine biosynthesis; and the first cell is a mammalian cell; and

contacting the first and second cells to the inhibitor;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell and the second cell does not contain the altered IMPDH but is otherwise substantially identical or similar to the first cell; and

wherein the nucleic acid molecule encodes the sequence of amino acids set forth in SEQ. ID. NO. 4 or the sequence of amino acids set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

273. (previously presented) A method of providing a selective advantage for proliferation of a first cell relative to a second cell, comprising

introducing a nucleic acid molecule encoding an altered inosine monophosphate dehydrogenase (IMPDH) into the first cell;

wherein the altered IMPDH is resistant to an inhibitor of purine biosynthesis; and the first cell is a mammalian cell; and

contacting the first and second cells to the inhibitor;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell and the second cell does not contain the altered IMPDH but is otherwise substantially identical or similar to the first cell; and

wherein the nucleic acid molecule comprises the sequence of nucleotide residues from # 48 to # 1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from # 48 to # 1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614to # 619 in SEQ ID. No. 3; or the sequence of nucleotide residues from #54-to # 1595 of SEQ ID. No. 40.

274. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered form of an mammalian enzyme of a nucleotide biosynthesis pathway into the first cell; and

contacting the first and second cells with an inhibitor of an unaltered form of the mammalian enzyme but to which the altered form is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered form of the mammalian enzyme but is otherwise substantially identical or similar to the first cell;

wherein the mammalian enzyme is a human IMPDH; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

275. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered form of an mammalian enzyme of a nucleotide biosynthesis pathway into the first cell; and

contacting the first and second cells with an inhibitor of an unaltered form of the mammalian enzyme but to which the altered form is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered form of the mammalian enzyme but is otherwise substantially identical or similar to the first cell;

wherein the mammalian enzyme is a human IMPDH; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

276. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell;

wherein the mammalian IMPDH is a human IMPDH; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

277. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell;

wherein the mammalian IMPDH is a human IMPDH; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

278. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a human cell; and

contacting the first and second cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

279. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a human cell; and

contacting the first and second cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614-619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54-1595 of SEQ. ID. No. 40.

280. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first cell; and

contacting the first and second cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first cell; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

281. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered human inosine monophosphate dehydrogenase (IMPDH) into the first cell; and

contacting the first and second cells with an inhibitor to an unaltered human IMPDH but to which the altered human IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered human IMPDH but is otherwise substantially identical or similar to the first cell; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

282. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a mammalian cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell;

wherein the mammalian IMPDH is a human IMPDH; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

283. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a mammalian cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell;

wherein the mammalian IMPDH is a human IMPDH; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.

284. (previously presented) A method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a human cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell;

wherein the mammalian IMPDH is a human IMPDH; and

wherein the nucleic acid encodes the amino acid sequence set forth in SEQ. ID. NO. 4 or the amino acid sequence set forth in SEQ. ID. NO. 4 containing an alanine at amino acid position 190 and a glycine at amino acid position 191.

285. (previously presented) Method of providing for selective proliferation, viability or proliferation and viability of a first cell relative to a second cell, comprising:

introducing a nucleic acid encoding an altered mammalian inosine monophosphate dehydrogenase (IMPDH) into the first cell, wherein the first cell is a human cell; and

contacting the first and second cells with an inhibitor to an unaltered mammalian IMPDH but to which the altered IMPDH is resistant;

whereby the first cell exhibits greater proliferation, viability or proliferation and viability relative to the second cell which does not contain the altered mammalian IMPDH but is otherwise substantially identical or similar to the first cell;

wherein the mammalian IMPDH is a human IMPDH; and

wherein the nucleic acid comprises the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3; the sequence of nucleotide residues from #48 to #1589 in SEQ. ID. NO. 3 containing the sequence of nucleotides TGCAGG at the nucleotide residues from # 614 to #619 in SEQ. ID. No. 3; or the sequence of nucleotide residues from #54 to #1595 of SEQ. ID. No. 40.